

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-11, 13-19 and 21-38 are pending, with Claims 1 and 22 amended by the present amendment.

In the Official Action, Claims 1-11, 13-19, and 21-38 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Giger et al. (U.S. Patent No. 6,205,348, hereafter Giger) in view of Jabri et al. (U.S. Patent No. 6,661,873, hereafter Jabri).

Briefly recapitulating, Claim 1 is directed to

A method for identifying pathologic change in medical image data, comprising:

obtaining a temporal subtraction image from two images taken at different times;

extracting at least one feature from the subtraction image;

determining whether a region of interest in the subtraction image includes an abnormality based on the extracted at least one feature; and

superimposing a computer-aided diagnostic symbol indicating a location of a region representing said pathologic change on at least one of the temporal subtraction image and the two images.

Claim 22 recites, *inter alia*, means for superimposing a computer-aided diagnostic symbol indicating a location of a region representing said pathologic change on at least one of the temporal subtraction image and the two images.

Giger describes a computerized method and system for radiographic analysis of bone structure. However, contrary to the Official Action, Giger does not disclose or suggest superimposing a computer aided diagnostic symbol on at least one of the temporal subtraction and the two images. Indeed, Applicants note that the Official Action does not provide a specific citation for this feature within Giger. If the Examiner does not agree with

Applicants' position, Applicants request the Examiner identify a specific citation for the claimed superimposing.

As acknowledged by the Official Action, Giger does not disclose or suggest Applicants' images taken at different times. To cure this deficiency, the Official Action applies Jabri. Jabri describes a method and system for decomposing soft tissue and bone images from low and high energy images acquired from an imaging system. In Jabri, the time interval between acquisitions is described as being short (on the order of 100-200 ms). The time interval described in Jabri is not long enough to capture pathologic change. Thus, Applicants submit that Jabri does not cure the deficiencies of Giger. However, to further progress toward allowance, Claim 1 is amended to recite that the computer-aided diagnostic symbol indicates a location of a region representing a pathologic change. Claim 22 is similarly amended. Support for this amendment is found in Applicants' originally filed specification.¹ No new matter is added. Because the time interval described in Jabri is not long enough to capture pathologic change, Jabri does not cure the deficiencies of Giger.

Furthermore, Applicants note that no grounds of rejection are identified in the Official Action for any of the claims that depend from independent Claims 1 and 22 (or the claims that depend from Claims 14 and 33). Thus, Applicants submit that the Official Action does not present a *prima facie* of obviousness for these dependent claims. If Applicants' dependent claims are again rejected, Applicants request specific grounds of rejection be identified for each feature recited in these dependent claims.

Independent Claim 14 is directed to

A method for identifying pathologic change in medical image data, comprising:

obtaining a ***first dual-energy image***, a first standard image, and one of a first bone image and a first soft tissue image ***from the first dual-energy image*** at a first point in time;

¹ Specification, paragraph 36 of the published application.

obtaining a ***second dual-energy image***, a second standard image, and one of a second bone image and a second soft tissue image *from the second dual-energy image* at a second point in time;

using the first and second standard images to obtain shift vectors to obtain image registration;

performing temporal subtraction, using said shift vectors, on one of the first and second bone images or one of the first and second soft tissue images to produce a temporally subtracted image including a location of a region representing said pathologic change; and

outputting the temporally subtracted image.

Claim 33 recites, *inter alia*, means for obtaining first and second dual-energy images.

Contrary to the Official Action, Giger fails to disclose or suggest the use of dual-energy images when performing temporal subtraction using shift vectors to produce a temporarily subtracted image. Jabri fails to cure the deficiencies of Giger. In fact, the Official Action provides no citations for where these features, or other features of independent Claim 14 (or independent Claim 33), may be found in the applied references. That is, the Official Action appears to treat Claims 14 and 33 as dependent, rather than independent claims. If Claims 14 and 33 are again rejected, Applicants request specific grounds of rejection be identified for each feature recited in Claims 14 and 33, as well as all dependent claims.

As none of the cited prior art, individually or in combination, discloses or suggests all the elements of independent Claims 1, 14, 22 and 33, Applicants submit the inventions defined by Claims 1, 14, 22 and 33, and all claims depending therefrom, are not rendered obvious by the asserted references for at least the reasons stated above.²

² MPEP § 2142 "...the prior art reference (or references when combined) must teach or suggest **all** the claim limitations.

Accordingly, in view of the present amendment and in light of the previous discussion, Applicants respectfully submit that the present application is in condition for allowance and respectfully request an early and favorable action to that effect.

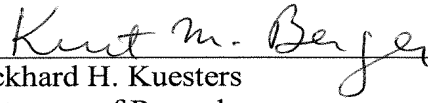
Respectfully submitted,

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